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EXAMINER

PAYNE, DAVID C

ART UNIT PAPER NUMBER

2633

DATE MAILED: 03/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/648,822

Applicant(s)

GRIPP ET AL.

Examiner

David C. Payne

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-20 is/are allowed.
- 6) ☒ Claim(s) 1-5, and 21-27 is/are rejected.
- 7) ☒ Claim(s) 6-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10 December 2003 have been fully considered but they are not persuasive.
2. (Claims 1, 2, 21, 22 and 25) Regarding applicant's claim that Kaminov does not teach where an input port of the frequency router simultaneously receives at least two optical signals and at least one output port simultaneously presents at least two frequency routed optical signals. Apparently, the applicant has interpreted the Kaminov teachings more narrowly than the examiner. Applicant has chosen a router, which is a sub-component of the wavelength/switch router disclosed by Kaminov. However, Kaminov describes the entire apparatus (100 of Figure 1) as a wavelength/router switch (see col. 3, lines 39-41). Again, Kaminov disclosed the wavelength/router switch including an array of N optical signal wavelength-domain or wavelength-sensitive demultiplexers each of which includes an input and a set of F output ports (see col. 1, lines 45-50). So the WDM input ports (101 of figure 1) are input ports to the apparatus or router. Thus, the apparatus as a whole should be interpreted as the "router" not the component wavelength switches (111 of Figure 1). As such it is clear that input ports 101n and output ports 127n simultaneously receive/present one or more wavelengths.
3. (Claim 4) Regarding applicant's claim that the converter/combiner coupling limitation of claim 4 is not reasonably suggested by the cited prior art. Figure 2 of Kaminov is very explicit in showing wavelength converters (201) coupled to Combiners (203).
4. (Claims 23 and 26): The modified invention of Kaminov and Glance has been shown above to disclose input and output ports with multiple wavelengths. It is submitted that the filters (Glance Figure 1 #3) on the output ports of the frequency router (1) teach processing or removing a wavelength as disclosed by the applicant.

Art Unit: 2633

5. (Claims 24 and 27): Glance disclosed tunable lasers on the inputs, which constitute coloring of the inputs for wavelength destination routing (see Col 2, lines 37-40).

6. (Claims 5): Brock disclosed the embodiment cited in Figure 2B.

Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or non-preferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). "A known or obvious composition does not become patentable simply because it has been described as somewhat inferior to some other product for the same use." In re Gurley, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) (The invention was directed to an epoxy impregnated fiber-reinforced printed circuit material. The applied prior art reference taught a printed circuit material similar to that of the claims but impregnated with polyester-imide resin instead of epoxy. The reference, however, disclosed that epoxy was known for this use, but that epoxy impregnated circuit boards have "relatively acceptable dimensional stability" and "some degree of flexibility," but are inferior to circuit boards impregnated with polyester-imide resins. The court upheld the rejection concluding that applicant's argument that the reference teaches away from using epoxy was insufficient to overcome the rejection since "Gurley asserted no discovery beyond what was known in the art." 27 F.3d at 554, 31 USPQ2d at 1132.)

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2633

2. Claim(s) 1-4, and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminow et al. US005623356A (Kaminow) in view of Glance et al. US005455699A (Glance).

Re claim(s) 1,3, 22, 24, 25 and 27 Kaminow disclosed,

An optical router comprising at least one frequency router (Figure 1) having a plurality of input ports ($101_1 - 101_N$) and a plurality of output ports ($127_1 - 127_N$), at least one input port simultaneously receives at least two optical signals-to be frequency routed (e.g., col./line(s): 2/55-60), and at least one output port simultaneously presenting at least two frequency routed optical signals (e.g., col./line(s): 3/60-65),

Kaminow did not disclose wherein each optical signal to be frequency routed is colored in response to destination information and each optical signal comprises destination information that is dynamically tuned to a particular color.

Glance disclosed a frequency router where each optical signal to be frequency routed in response to destination information (e.g., col./line(s): 2/44-47, 3/45-50). It would have been obvious to one of ordinary skill in the art at the time of invention route according to packet destination for the benefit building a large-capacity packet network that are optically transparent between input and output ports as disclosed by Glance (see e.g., col./line(s): 1/20-25). Furthermore, the Glance router uses wavelength information to route to a destination, the Kaminov signal will in fact comprise destination information if using the Glance routing method by definition since the destination route is 'encoded' in the wavelength. Finally, Glance disclosed a fast-tunable optical filter, which is used to route signals or 'dynamically tune to a particular color' (see col. 2/30-35).

Re claim(s) 21 the aforementioned invention disclosed N signals to N destinations as well as modulating data on the inputs (see Kaminow e.g., col./line(s): 3/3/50-60).

Re claim(s) 23 and 26, Glance disclosed removing a signal from an output port and processing the other signal (Figure 1 #3).

Re claim(s) 2, In the modified invention, Kaminow disclosed a plurality of combiners, one combiner for combining the at least two optical signals to be routed (Figure 2 #203, col./line: 4/25-40) and Glance disclosed a

Art Unit: 2633

plurality of receivers, one receiver for separating each of the at least two routed optical signals to intended destinations in response to destination information (Figure 1, $R_{X1} - R_{Xn}$)

Re claim(s) 4, In the modified invention as taught, Kaminow disclosed wherein the optical router receives packets of data, each packet of data having destination information, each combiner coupled with at least one converter of a plurality, each converter converting at least one packet of data to an optical signal colored in response to the destination information of the corresponding at least one packet of data (Figure 2).

3. Claim(s) 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminow et al. US005623356A (Kaminow) and Glance et al. US005455699A (Glance) as applied to claim 4 above, and further in view of Wang et al. US005745612 (Wang).

Re claim 5, Kaminow further disclosed
at least one input waveguide (Figure 1 #101_I);
at least one output waveguide (Figure 1 #101_N);
a first (Figure 1 #117_I) and a second free space region (Figure 1 #117_F), the first free space region coupled with the at least one input waveguide and the second free space region coupled with the at least one output waveguide (127). Kaminow and Glance do not disclose optical grating having a plurality of unequal length waveguides, each unequal length waveguide coupled between the first free space region and the second free space region. However, Wang (Figure 1) disclosed AWG (111 and 112) coupled in such a manner. It would have been obvious to one of ordinary skill in the art at the time of invention to use Wang's AWGs for the benefit removing on-chip waveguide crossing, overlapping) and therefore reducing signal loss (e.g., col./line(s): 2/64-67, 3/1-5)

Art Unit: 2633

4. Claim(s) 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaminow et al. US005623356A (Kaminow) and Glance et al. US005455699A (Glance) as applied to claim 4 above, and further in view of Brock et al. US005870216A (Brock).

Re claim 5, Kaminow further disclosed

at least one input waveguide (Figure 1 #101_I);

at least one output waveguide (Figure 1 #101_N);

a first (Figure 1 #117_I) and a second free space region (Figure 1 #117_F), the first free space region coupled with the at least one input waveguide and the second free space region coupled with the at least one output waveguide (127). Kaminow and Glance do not disclose optical grating having a plurality of unequal length waveguides, each unequal length waveguide coupled between the first free space region and the second free space region. However, Brock (Figure 7) disclosed AWG (126 and 128) coupled in such a manner. It would have been obvious to one of ordinary skill in the art at the time of invention to use Brock's AWGs for the benefit removing reducing signal loss associated with discrete components.

Allowable Subject Matter

5. Claims 9-20 are allowed.
6. Claims 6-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Art Unit: 2633

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David C. Payne whose telephone number is (703) 306-0004. The examiner can normally be reached on M-F, 7a-4p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (703) 305-4729. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dcp


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PRIMARY EXAMINER